Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 1. Numbers and Operation

Content Standard A: Number and Number Sense: Students will understand and demonstrate a sense of what numbers mean and how they are used. Students will be able to:

Grade 3	Grade 4	Grade 5
M1A1.3 Compare whole numbers using <, >, and = and order numbers up to 1000 and classify numbers as odd and even for numbers up to 1000.	M1A1.4 Read, compare, order, classify, and explain whole numbers up to one million.	M1A1.5 Compare, order, use, and represent simple fractions (halves, fourths, fifths, and tenths with all numerators) and decimals to hundredths.
	M1A2.4 Read, compare, order, classify, and explain simple fractions through tenths.	
		M1A3.5 Use divisibility rules for 2, 5 and 10.

Content Standard B: Computation: Students will understand and demonstrate computation skills (no calculator use for straight computation and numbers used in this section should match those listed for Standard A). Students will be able to:

Grade 3	Grade 4	Grade 5
M1B1.3 Solve single and multi-step, real-life problems using addition and subtraction with whole numbers with no number greater than 1000.	M1B1.4 Solve multi-step, real-life problems using the four operations with whole numbers.	M1B1.5 Compute and model all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths and do straight computation with these numbers and operations.
	M1B2.4 Solve real-life problems involving addition and subtraction of simple fractions.	M1B2.5 Create, solve, and justify the solution for multi-step, real-life problems involving all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths.
M1B3.3 Develop proficiency with the facts and algorithms of addition and subtraction on whole numbers using mental math and a variety of materials, strategies, and technologies with no number greater than 1000.	M1B3.4 Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.	

Content Standard I. Discrete Mathematics: There is considerable overlap with other areas and other aspects are more appropriately assessed locally. No Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 1. Numbers and Operation

Content Standard A: Number and Number Sense: Students will understand and demonstrate a sense of what numbers mean and how they are used. Students will be able to:

Grade 6	Grade 7	Grade 8
M1A1.6 Compare, order, use and represent fractions, (halves, thirds, fourths, fifths, sixths, eighths and tenths with all numerators); and compare, order, use and represent decimals to thousandths and convert between decimals and percentages.	M1A1.7 Compare, order, use, and represent fractions, decimals, and percents and convert among different numeral forms (limited to terminating decimals for decimal to fraction conversion) and apply concepts of integers, absolute value and positive exponents.	M1A1.8 Use numbers in a variety of equivalent and interchangeable forms (e.g., integer, fraction, decimal, percent, exponential, and scientific notation) in problem-solving.
M1A3.6 Recognize and apply concepts of prime and composite numbers and use divisibility rules for 2, 3, 4, 5, 6, 9 and 10; and recognize and find factors and multiples of natural numbers.	M1A3.7 Apply concepts of ratios in practical or other mathematical situations.	M1A3.8 Apply concepts of ratios, proportions, percents, and number theory (e.g. primes, factors, and multiples) in practical and other mathematical situations.

Content Standard B: Computation: Students will understand and demonstrate computation skills (no calculator use for straight computation and numbers used in this section should match those listed for Standard A). Students will be able to:

Grade 6	Grade 7	Grade 8
M1B1.6 Compute and model all four operations with whole numbers, common fractions and decimals to thousandths, and do straight computation with these numbers and operations. Division limited to 2-digit whole number divisors and 3-digit dividends.	M1B1.7 Compute and model all four operations with whole numbers, fractions (including mixed numerals), decimals, and percents applying order of operations and do straight computation with these numbers and operations.	M1B1.8 Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.
M1B2.6 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, common fractions and decimals to thousandths, with division limited to 2-digit whole number divisors and 3-digit dividends.	M1B2.7 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, fractions (including mixed numerals), decimals, and percents.	M1B2.8 Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.

Content Standard I. Discrete Mathematics: There is considerable overlap with other areas and other aspects are more appropriately assessed locally. No Grade Level Expectations.

GLE Code: The first character = content area; Second character = cluster number; third character = content standard letter; Fourth character = performance indicator; Fifth character after decimal point =grade level

Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 2. Shape and Size		
Content Standard e: Geometry: Students will understand and apply concepts form geometry.		
Grade 3	Grade 4	Grade 5
M2E1.3 Use properties/ attributes limited to number of sides, number of angles, to identify, describe, and distinguish between triangles and rectangles and lengths of sides to identify squares as special rectangles.	M2E1.4 Describe, model, and classify shapes and figures using applicable properties.	M2E1.5 Use properties/ attributes limited to number of sides, number of angles, and length of sides, and lines of symmetry, to classify polygons.
M2E2.3 Identify a line of symmetry for a given shape or answer questions about figures based on lines of symmetry, e.g. "which of the following shapes have one or more lines of symmetry?"	M2E2.4 Experiment with shapes and figures to make generalizations regarding congruency, symmetry, and similarity.	
	M2E3.4 Use transformations such as slides, flips, and rotations.	M2E2.5. Plot non-negative values as points on a number line.
Content Standard F: Measurement: Students will understand and demonstrate measurement skills. Students will be able to:		
Grade 3	Grade 4	Grade 5
M2F1.3 Solve and justify solutions to real-life problems involving the measurement of time, length, and temperature including using a ruler to measure length to the nearest inch and whole centimeter. **Ruler on grade 3,4 &5 tests*	M2F1.4 Solve and justify solutions to real-life problems involving the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, and volume.	M2F2.5 Use ruler to measure length to the nearest quarter inch and centimeter.
M2F2.3 Select appropriate tools and units to measure length, time, and temperature	M2F2.4- Select measuring tools and units of measurement that are appropriate for what is being measured.	
		M2F3.5 Find area and perimeter of rectangles with whole numbers (includes formula use) with correct units. *Formula sheets as appropriate in all grades.*

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Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 2. Shape and Size		
Content Standard e: Geometry: Students will understand and apply concepts form geometry.		
Grade 6	Grade 7	Grade 8
M2E1.6 Use properties/ attributes limited to number of sides, number of angles, and length of sides, lines of symmetry, parallel sides, perpendicular sides, and angles relative to 90° to classify polygons; and to compare and classify rectangular prisms, including cubes; and triangular prisms.	M2E1.7 Use properties/ attributes limited to number of vertices, number of edges, number of faces, shapes of faces, and types of angles to identify and distinguish among 3 dimensional shapes.	M2E1.8 Compare, classify, and draw two-dimensional shapes and three-dimensional figures.
		M2E2.8 Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.
M2E3.6 Use ordered pairs as coordinates of points in the first quadrant of a coordinate plane.	M2E3.7 Use a coordinate system to define and locate position.	M2E3.8 Use a coordinate system to define and locate position.
Content Standard F: Measurement: Students will understand and demonstrate measurement skills. Students will be able to:		
Grade 6	Grade 7	Grade 8
M2F2.6 Solve problems using elapsed time, thermometers, and scales.	M2F1.7 Perform conversions between pairs within the following groups: inches, feet, yards, and miles; millimeters, centimeters, meters, and kilometers; cups, pints, quarts, and gallons; milliliters and liters; ounces, pounds and tons; grams and kilograms; seconds, minutes, hours, days, weeks, months, and years.	M2F1.8 Demonstrate the structure and use of systems of measurements.
		M2F2.8 Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate).
M2F3.6 Compute the area and perimeter of triangles and rectangles with whole numbers (formula use), and find the volume of rectangular solids using pictures of blocks or gridded diagram with correct units.	M2F3.7 Given formulas from which to choose, find areas and perimeters of 2-D shapes (includes circles), and volumes of rectangular solids with rational numbers with correct units.	M2F3.8 Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.

Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 3. Mathematical Decision Making

Content Standard C: Data Analysis and Statistics: Students will understand and apply concepts of data analysis. Students will be able to:

Grade 3	Grade 4	Grade 5
	M3C1.4 Make generalizations and draw conclusions using various types of graphs, charts, and tables.	M3C1.5 Organize data to find mode, median and range of a set of values.
M3C2.3 Read and interpret displays of data: line plots, tables, tally charts, and bar graphs, identifying least frequent, most frequent (mode*), reading, using and comparing values. *not responsible for this vocabulary	M3C2.4 Read and interpret displays of data.	

Content Standard D: Probability: Students will understand and apply concepts of probability. Students will be able to:

In the following GLEs it is expected that students use area and set models.

Grade 3	Grade 4	Grade 5
M3D1.3 Recognize and describe the likelihood of the occurrence of an event using "likely", "not likely" or "equally likely."	M3D1.4 Estimate probability from a sample of observed outcomes and simulations.	M3D1.5 Find the probabilities of simple events and represent them as fractions (1/2, 1/3, 2/3, 1/4, 2/4, 3/4 eligible).

Content Standard J. Mathematical Reasoning: The time demand and cognitive demand of these indicators make them inappropriate for large-scale assessment. No Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 3. Mathematical Decision Making

Content Standard C: Data Analysis and Statistics: Students will understand and apply concepts of data analysis. Students will be able to:

Grade 6	Grade 7	Grade 8
M3C1.6 Organize data to find modes, medians, means and ranges for sets of data and displays: Data displays include frequency distributions, tables, line plots, or bar graphs (e.g., given a bar graph, determine the mode, median, range and mean).	M3C1.7 Organize data and analyze patterns and trends in data using modes, medians, means and ranges for sets of data (emphasis on comparing sets begins). Data displays include lists, tables, frequency distributions, line plots, bar graphs or stem and leaf plots.	M3C1.8 Organize and analyze data using mean, median, mode, and range.

Content Standard D: Probability: Students will understand and apply concepts of probability. Students will be able to:

In the following GLEs it is expected that students use area and set models.

Grade 6	Grade 7	Grade 8
M3D1.6 Find the probabilities of simple events (sample space number and number of desired outcomes given) and represent them as fractions (simplest form not needed).	M3D1.7 Find the probability of simple events and express the probability as a fraction or a percentage (percentages limited to multiples of 10% and 25%).	M3D1.8 Find the probability of simple events and make predictions by applying the theories of probability.
M3D4.6 Find the number of arrangements of 3 factors with no more than 4 choices per factor (e.g., tree diagram, organized list, pictures).	M3D4.7 Apply the idea of permutation in a problem situation with 6 elements or fewer (e.g., how many ways can the four letters in the word "math" be arranged?).	M3D4.8 Find all possible combinations and arrangements involving a limited number of variables.

Content Standard J. Mathematical Reasoning: The time demand and cognitive demand of these indicators make them inappropriate for large-scale assessment. No Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 4. Patterns

Content Standard G: Patterns, Relations, and Functions: Students will understand that mathematics is the science of patterns, relationships, and functions. Students will be able to:

Grade 3	Grade 4	Grade 5
M4G1.3 Determine the next term or missing terms in patterns with numbers or shapes.	M4G1.4. Use the patterns of numbers, geometry, and a variety of graphs to solve a problem.	M4G1.5 Translate real-life situations into addition, subtraction, multiplication, or division sentences.
M4G2.3 Translate real-life situations into addition and subtraction sentences.	M4G2.4 Use variables and open sentences to express relationships.	
		M4G3.5 Solve problems involving linear patterns in tables, graphs, words or rules using whole numbers.

Content Standard H: Algebra Concepts: Students will understand and apply algebraic concepts. Students will be able to:

Grade 3	Grade 4	Grade 5
	M4H1.4 Develop and evaluate simple formulas in problem-solving contexts.	
M4H2.3 Solve for a missing number or find the replacement for a symbol in addition and subtraction sentences using whole numbers.	M4H2.4 Find replacements for variables that make simple number sentences true.	
		M4H6.5 Solve one-step equations using addition, subtraction, or multiplication with a variable. Values are limited to whole numbers.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

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Maine Mathematics Grade Level Expectations for Grades 3-8

Cluster 4. Patterns

Content Standard G: Patterns, Relations, and Functions: Students will understand that mathematics is the science of patterns, relationships, and functions. Students will be able to:

Grade 6	Grade 7	Grade 8
M4G1.6 Translate real-life situations into addition, subtraction, multiplication, and division sentences with whole numbers (mix of operations included).	M4G1.7 Translate real-life linear situations into equations (limited to one step).	M4G1.8 Describe and represent relationships with tables, graphs, and equations.
M4G3.6 Solve problems involving linear patterns in the form of tables, graphs, words, rules and equations using whole numbers, decimals to hundredths and simple fractions.	M4G3.7 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including signed values).	M4G3.8 Use patterns and multiple representations to solve problems.

Content Standard H: Algebra Concepts: Students will understand and apply algebraic concepts. Students will be able to:

Grade 6	Grade 7	Grade 8
		M4H3.8 Analyze tables and graphs to identify properties and relationships in a practical context.
M4H6.6 Solve one-step equations using whole numbers with all four operations.	M4H6.7 Solve two-step equations using integers and positive rational numbers.	M4H6.8 Find solutions for unknown quantities in linear equations and in simple equations and inequalities.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

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Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard A: Process of Reading: Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read. Students will:		
Grade 3	Grade 4	Grade 5
R1A1.3 Determine the meaning of unknown words through these strategies: by reading words in context and by using knowledge of word structures (prefixes, suffixes, base words, or multi-syllabic structures).	R1A1.4 Determine the meaning of unknown words by using a dictionary, glossary, or other reference sources. [Maine GLE Reading Panel Recommendation: Other reference sources may include prior knowledge of context clues, word structures, etc. for grade 4.]]	
		R1A8.5 Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 5.]
		R1A7.5 Summarize by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre. [Text complexity appropriate for grade 5.]

Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard A: Process of Reading: Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read. Students will:		
Grade 6	Grade 7	Grade 8
R1A8.6 Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 6.]	R1A8.7 Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 7.]	R1A8.8 Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]
R1A7.6 Summarize whole text by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre. [Text complexity appropriate for grade 6.]	R1A7.7 Summarize whole text by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre. [Text complexity appropriate for grade 7.]	R1A7.8 Summarize whole texts by selecting and summarizing important and representative passages. [Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard B: Literature and Culture: Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture. Students will:		
Grade 3	Grade 4	Grade 5
R1B10.3 Apply effective strategies for identifying and describing character, setting, and plot; analyzing and describing the physical and personality traits of main characters; identifying the author's basic message; and identifying the literary devices of dialogue and description to the reading and interpretation of fiction. [Text complexity appropriate for grade 3.]	R1B10.4 Apply effective strategies to the reading and interpretation of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) that is appropriately complex in terms of character, plot, theme, and dialogue and appropriately sophisticated in style, point of view, and use of literary devices. [Maine GLE Reading Panel Recommendation: Appropriate literary devices may include similes, rhyme, and alliteration for grade 4.]	R1B8.5 Apply effective strategies for analyzing and describing characters' interactions-citing thoughts, words, or actions, that reveal characters' personalities; making basic inferences about problem, conflict, and solution; determining the author's message or theme; and identifying the literary devices of imagery, simple metaphors, and idioms to the reading and interpretation of fiction. [Text complexity appropriate for grade 5].
R1B11.3 Apply effective strategies for recognizing appropriate generalizations about text; drawing conclusions or forming judgments/opinions about central ideas that are relevant to the reading and use of narrative nonfiction. [Text length and complexity appropriate for grade 3.]	R1B11.4 Apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) using texts with an appropriate complexity of content and sophistication of style.	R1B9.5 Apply effective strategies for synthesizing information within and across text(s); making inferences about text, including the author's message or purpose (e.g., to inform, to entertain, to explain, or to persuade); and supporting opinions/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction texts. [Text length and complexity appropriate for grade 5.]

Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard B: Literature and Culture: Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture. Students will:		
Grade 6	Grade 7	Grade 8
R1B8.6 Apply effective strategies for analyzing and describing characters' traits, interactions, and changes over time; making basic inferences about problem, conflict, or solution; of identifying the relationships among elements within the text (plot, character, setting, and types of conflict); determining author's message and point of view-stated or implied; and identifying the literary devices of flashback, foreshadowing, and repetition to the reading and interpretation of fiction. [Text complexity appropriate for grade 6.]	R1B8.7 Apply effective strategies for analyzing and describing characters' interactions and motivations- citing thoughts, words, or actions that reveal characters' personalities; making inferences about cause/effect, internal/external conflicts and resolutions; analyzing the relationship among elements within the text- person vs. self, person vs. person, person vs. nature/society/fate; explaining how the author's message or theme is supported within the text; analyzing the author's point of view; and identifying the literary devices of metaphors, personification, and onomatopoeia to the reading and interpretation of fiction. [Text complexity appropriate for grade 7.]	R1B8.8 Apply effective strategies to the reading and interpretation of fiction (e.g., science fiction, myths, mysteries, realistic and historical fiction, poems, adventure stories, and humorous tales), using texts that are appropriately sophisticated in style, point of view, and use of literary devices. [Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]
R1B9.6 Apply effective strategies for synthesizing information within and across text (s); making inferences about text, including author's message or purpose (e.g., to inform, to explain, to entertain, to persuade); and forming and supporting opinion/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction texts. [Text length and complexity appropriate for grade 6.]	R1B9.7 Apply effective strategies for synthesizing and evaluating information within and across texts; making inferences about text, including author's message or purpose (e.g., to inform, to explain, to entertain, or to persuade); and forming and supporting warranted* opinions/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction. [Text length and complexity appropriate for grade 7.] * defensible, viable	R1B9.8 Apply effective strategies to the reading and use of moderately long nonfiction texts (e.g., references sources, articles, editorials, histories, biographies, autobiographies, diaries, letters, and commentaries), which have an appropriate complexity of content and sophistication of style. [Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard D: Informational Texts: Students will apply reading, listening, and viewing strategies to informational texts across all areas of curriculum. Students will:		
Grade 3	Grade 4	Grade 5
R1D2.3 Identify various informational parts of a text (e.g. table of contents, glossary, bolded or italicized text, headings, graphic organizers, charts and graphs, and illustrations). [Text complexity appropriate for grade 3.]	R1D2.4 Use various informational parts of a text (e.g., index, table of contents, glossary, appendices).	R1D4.5 Identify the informational text structures of description, sequence, and question and answer. [Text complexity appropriate for grade 5.]
R1D4.3 Organize information to show understanding (e.g., represent key points within text through charting, mapping, etc.).	R1D4.4 Summarize informational texts (e.g., identify the main idea or concept and the supporting details).	R1D5.5 Organize information to show understanding (e.g., representing key points within text through paraphrasing, summarizing, and/or answering questions). [Text complexity appropriate for grade 5.]

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Maine Reading Grade Level Expectations for Grades 3-8

Cluster 1: Reading and Viewing		
Content Standard D: Informational Texts: Students will apply reading, listening, and viewing strategies to informational texts across all areas of curriculum. Students will:		
Grade 6	Grade 7	Grade 8
R1D4.6 Identify the informational text structure of compare and contrast. [Text complexity appropriate for grade 6.]	R1D4.7 Identify the informational texts structures of problem/solution and cause/effect. [Text complexity appropriate for grade 7.]	R1D4.8 Identify different ways in which informational texts are organized. [Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]
R1D5.6 Make inferences about text, including the author's purpose and/or message, by forming and supporting opinions/judgments and assertions about the text that are relevant. [Text complexity appropriate for grade 6.]	R1D5.7 Make inferences about text, including the author's purpose and/or message, by forming and supporting warranted* opinions/judgments and assertions about the text that are relevant. [Text complexity appropriate for grade 7.] *defensible, viable	R1D5.8 Produce and support generalizations acquired from informational text.

Maine Mathematics Grade Level Expectations for Grade 3

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.3 Compare whole numbers using <, >, and = and order numbers up to 1000 and classify numbers as odd and even for numbers up to 1000. **B. Computation** M1B1.3 Solve single and multi-step, real-life problems using addition and subtraction with whole numbers with no number greater than 1000. M1B3.3 Develop proficiency with the facts and algorithms of addition and subtraction on whole numbers using mental math and a variety of materials, strategies, and technologies with no number greater than 1000.	**E. Geometry** M2E1.3 Use properties/ attributes limited to number of sides, number of angles, to identify, describe, and distinguish between triangles and rectangles and lengths of sides to identify squares as special rectangles. M2E2.3 Identify a line of symmetry for a given shape or answer questions about figures based on lines of symmetry, e.g. "which of the following shapes have one or more lines of symmetry?" **F. Measurement** M2F1.3 Solve and justify solutions to real-life problems involving the measurement of time, length, and temperature including using a ruler to measure length to the nearest inch and whole centimeter. M2F2.3 Select appropriate tools and units to measure length, time, and temperature **Ruler on grade 3,4 &5 tests*	**C. Data Analysis and Statistics** M3C2.3 Read and interpret displays of data: line plots, tables, tally charts, and bar graphs, identifying least frequent, most frequent (mode*), reading, using and comparing values. *not responsible for this vocabulary **D. Probability** M3D1.3 Recognize and describe the likelihood of the occurrence of an event using "likely", "not likely" or "equally likely."	**G. Patterns, Relations, and Functions** M4G1.3 Determine the next term or missing terms in patterns with numbers or shapes. M4G2.3 Translate real-life situations into addition and subtraction sentences. **H. Algebra Concepts** M4H2.3 Solve for a missing number or find the replacement for a symbol in addition and subtraction sentences using whole numbers.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

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Maine Mathematics Grade Level Expectations for Grade 4

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.4 Read, compare, order, classify, and explain whole numbers up to one million. M1A2.4 Read, compare, order, classify, and explain simple fractions through tenths. **B. Computation** M1B1.4 Solve multi-step, real-life problems using the four operations with whole numbers. M1B2.4 Solve real-life problems involving addition and subtraction of simple fractions. M1B3.4 Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.	**E. Geometry** M2E1.4 Describe, model, and classify shapes and figures using applicable properties. M2E2.4 Experiment with shapes and figures to make generalizations regarding congruency, symmetry, and similarity. M2E3.4 Use transformations such as slides, flips, and rotations. **F. Measurement** M2F1.4 Solve and justify solutions to real-life problems involving the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, and volume. M2F2.4 Select measuring tools and units of measurement that are appropriate for what is being measured.	**C. Data Analysis and Statistics** M3C1.4 Make generalizations and draw conclusions using various types of graphs, charts, and tables. M3C2.4 Read and interpret displays of data. **D. Probability** M3D1.4 Estimate probability from a sample of observed outcomes and simulations.	**G. Patterns, Relations, and Functions** M4G1.4. Use the patterns of numbers, geometry, and a variety of graphs to solve a problem. M4G2.4 Use variables and open sentences to express relationships. **H. Algebra Concepts** M4H1.4 Develop and evaluate simple formulas in problem-solving contexts. M4H2.4 Find replacements for variables that make simple number sentences true.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grade 5

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.5 Compare, order, use, and represent simple fractions (halves, fourths, fifths, and tenths with all numerators) and decimals to hundredths. M1A3.5 Use divisibility rules for 2, 5 and 10. **B. Computation** M1B1.5 Compute and model all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths and do straight computation with these numbers and operations. M1B2.5 Create, solve, and justify the solution for multi-step, real-life problems involving all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths.	**E. Geometry** M2E1.5 Use properties/ attributes limited to number of sides, number of angles, and length of sides, and lines of symmetry, to classify polygons. M2E3.5. Plot non-negative values as points on a number line. **F. Measurement** M2F2.5 Use ruler to measure length to the nearest quarter inch and centimeter. M2F3.5 Find area and perimeter of rectangles with whole numbers (includes formula use) with correct units. *Formula sheets as appropriate in all grades*.	**C. Data Analysis and Statistics** M3C1.5 Organize data to find mode, median and range of a set of values. **D. Probability** M3D1.5 Find the probabilities of simple events and represent them as fractions (1/2, 1/3, 2/3, 1/4, 2/4, 3/4 eligible).	**G. Patterns, Relations, and Functions** M4G1.5 Translate real-life situations into addition, subtraction, multiplication, or division sentences. M4G3.5 Solve problems involving linear patterns in tables, graphs, words or rules using whole numbers. **H. Algebra Concepts** M4H6.5 Solve one-step equations using addition, subtraction, or multiplication with a variable. Values are limited to whole numbers.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grade 6

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.6 Compare, order, use and represent fractions, (halves, thirds, fourths, fifths, sixths, eighths and tenths with all numerators); and compare, order, use and represent decimals to thousandths and convert between decimals and percentages. M1A3.6 Recognize and apply concepts of prime and composite numbers and use divisibility rules for 2, 3, 4, 5, 6, 9 and 10; and recognize and find factors and multiples of natural numbers. **B. Computation** M1B1.6 Compute and model all four operations with whole numbers, common fractions and decimals to thousandths, and do straight computation with these numbers and operations. Division limited to 2-digit whole number divisors and 3-digit dividends. M1B2.6 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, common fractions and decimals to thousandths, with division limited to 2-digit whole number divisors and 3-digit dividends.	**E. Geometry** M2E1.6 Use properties/ attributes limited to number of sides, number of angles, and length of sides, lines of symmetry, parallel sides, perpendicular sides, and angles relative to 90° to classify polygons; and to compare and classify rectangular prisms, including cubes; and triangular prisms. M2E3.6 Use ordered pairs as coordinates of points in the first quadrant of a coordinate plane. **F. Measurement** M2F2.6 Solve problems using elapsed time, thermometers, and scales. M2F3.6 Compute the area and perimeter of triangles and rectangles with whole numbers (formula use), and find the volume of rectangular solids using pictures of blocks or gridded diagram with correct units.	**C. Data Analysis and Statistics** M3C1.6 Organize data to find modes, medians, means and ranges for sets of data and displays: Data displays include frequency distributions, tables, line plots, or bar graphs (e.g., given a bar graph, determine the mode, median, range and mean). **D. Probability** M3D1.6 Find the probabilities of simple events (sample space number and number of desired outcomes given) and represent them as fractions (simplest form not needed). M3D4.6 Find the number of arrangements of 3 factors with no more than 4 choices per factor (e.g., tree diagram, organized list, pictures).	**G. Patterns, Relations, and Functions** M4G1.6 Translate real-life situations into addition, subtraction, multiplication, and division sentences with whole numbers (mix of operations included). M4G3.6 Solve problems involving linear patterns in the form of tables, graphs, words, rules and equations using whole numbers, decimals to hundredths and simple fractions. **H. Algebra Concepts** M4H6.6 Solve one-step equations using whole numbers with all four operations.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

Maine Mathematics Grade Level Expectations for Grade 7

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.7 Compare, order, use, and represent fractions, decimals, and percents and convert among different numeral forms (limited to terminating decimals for decimal to fraction conversion) and apply concepts of integers, absolute value and positive exponents. M1A3.7 Apply concepts of ratios in practical or other mathematical situations. **B. Computation** M1B1.7 Compute and model all four operations with whole numbers, fractions (including mixed numerals), decimals, and percents applying order of operations and do straight computation with these numbers and operations. M1B2.7 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, fractions (including mixed numerals), decimals, and percents.	**E. Geometry** M2E1.7 Use properties/ attributes limited to number of vertices, number of edges, number of faces, shapes of faces, and types of angles to identify and distinguish among 3 dimensional shapes. M2E3.7 Use a coordinate system to define and locate position. **F. Measurement** M2F1.7 Perform conversions between pairs within the following groups: inches, feet, yards, and miles; millimeters, centimeters, meters, and kilometers; cups, pints, quarts, and gallons; milliliters and liters; ounces, pounds and tons; grams and kilograms; seconds, minutes, hours, days, weeks, months, and years. M2F3.7 Given formulas from which to choose, find areas and perimeters of 2-D shapes (includes circles), and volumes of rectangular solids with rational numbers with correct units.	**C. Data Analysis and Statistics** M3C1.7 Organize data and analyze patterns and trends in data using modes, medians, means and ranges for sets of data (emphasis on comparing sets begins). Data displays include lists, tables, frequency distributions, line plots, bar graphs or stem and leaf plots. **D. Probability** M3D1.7 Find the probability of simple events and express the probability as a fraction or a percentage (percentages limited to multiples of 10% and 25%). M3D4.7 Apply the idea of permutation in a problem situation with 6 elements or fewer (e.g., how many ways can the four letters in the word “math” be arranged?).	**G. Patterns, Relations, and Functions** M4G1.7 Translate real-life linear situations into equations (limited to one step). M4G3.7 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including signed values). **H. Algebra Concepts** M4H6.7 Solve two-step equations using integers and positive rational numbers.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

 GLE Code: The first character = content area; Second character = cluster number; third character = content standard letter; Fourth character = performance indicator; Fifth character after decimal point =grade level

Maine Mathematics Grade Level Expectations for Grade 8

Cluster 1 – Numbers and Operations	Cluster 2 – Shape and Size	Cluster 3 – Mathematical Decision Making	Cluster 4 - Patterns
A. Numbers and Number Sense M1A1.8 Use numbers in a variety of equivalent and interchangeable forms (e.g., integer, fraction, decimal, percent, exponential, and scientific notation) in problem-solving. M1A3.8 Apply concepts of ratios, proportions, percents, and number theory (e.g. primes, factors, and multiples) in practical and other mathematical situations. **B. Computation** M1B1.8 Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations. M1B2.8 Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	**E. Geometry** M2E1.8 Compare, classify, and draw two-dimensional shapes and three-dimensional figures. M2E2.8 Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes. M2E3.8 Use a coordinate system to define and locate position. **F. Measurement** M2F1.8 Demonstrate the structure and use of systems of measurements. M2F2.8 Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate). M2F3.8 Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.	**C. Data Analysis and Statistics** M3C1.8 Organize and analyze data using mean, median, mode, and range. **D. Probability** M3D1.8 Find the probability of simple events and make predictions by applying the theories of probability. M3D4.8 Find all possible combinations and arrangements involving a limited number of variables.	**G. Patterns, Relations, and Functions** M4G1.8 Describe and represent relationships with tables, graphs, and equations. M4G3.8 Use patterns and multiple representations to solve problems. **H. Algebra Concepts** M4H3.8 Analyze tables and graphs to identify properties and relationships in a practical context. M4H6.8 Find solutions for unknown quantities in linear equations and in simple equations and inequalities.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of use of algebraic notation, there are no Grade Level Expectations.

Maine Reading Grade Level Expectations for Grade 3

Cluster 1: Reading and Viewing

Process of Reading

R1A1.3 Determine the meaning of unknown words through these strategies: by reading words in context and by using knowledge of word structures (prefixes, suffixes, base words, or multi-syllabic structures).

B. Literature and Culture

R1B10.3

Apply effective strategies for identifying and describing character, setting, and plot; analyzing and describing the physical and personality traits of main characters; identifying the author's basic message; and identifying the literary devices of dialogue and description to the reading and interpretation of fiction. [Text complexity appropriate for grade 3.]

R1B11.3

Apply effective strategies for recognizing appropriate generalizations about text; drawing conclusions or forming judgments/opinions about central ideas that are relevant to the reading and use of narrative nonfiction. [Text length and complexity appropriate for grade 3.]

D. Informational Texts

R1D2.3

Identify various informational parts of a text (e.g. table of contents, glossary, bolded or italicized text, headings, graphic organizers, charts and graphs, and illustrations). [Text complexity appropriate for grade 3.]

R1D4.3

Organize information to show understanding (e.g., represent key points within text through charting, mapping, etc.).

Maine Reading Grade Level Expectations for Grades 4

Cluster 1: Reading and Viewing

A. Process of Reading

R1A1.4
Determine the meaning of unknown words by using a dictionary, glossary, or other reference sources.

[Maine GLE Reading Panel Recommendation: Other reference sources may include prior knowledge of context clues, word structures, etc. for grade 4.]]

B. Literature and Culture

R1B10.4
Apply effective strategies to the reading and interpretation of fiction (e.g., fantasies, fables, myths, mysteries, realistic and historical fiction, adventures, and humorous tales) that is appropriately complex in terms of character, plot, theme, and dialogue and appropriately sophisticated in style, point of view, and use of literary devices.

[Maine GLE Reading Panel Recommendation: Appropriate literary devices may include similes, rhyme, and alliteration for grade 4.]

R1B11.4
Apply effective strategies to the reading and use of nonfiction (e.g., reference sources, articles, histories, biographies, autobiographies, diaries, and letters) using texts with an appropriate complexity of content and sophistication of style.

D. Informational Texts

R1D2.4
Use various informational parts of a text (e.g., index, table of contents, glossary, appendices).

R1D4.4
Summarize informational texts (e.g., identify the main idea or concept and the supporting details).

Maine Reading Grade Level Expectations for Grade 5

Cluster 1: Reading and Viewing

A. Process of Reading

R1A7.5
Summarize by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre. [Text complexity appropriate for grade 5.]

R1A8.5
Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 5.]

B. Literature and Culture

R1B8.5
Apply effective strategies for analyzing and describing characters' interactions-citing thoughts, words, or actions, that reveal characters' personalities; making basic inferences about problem, conflict, and solution; determining the author's message or theme; and identifying the literary devices of imagery, simple metaphors, and idioms to the reading and interpretation of fiction. [Text complexity appropriate for grade 5].

R1B9.5
Apply effective strategies for synthesizing information within and across text(s); making inferences about text, including the author's message or purpose (e.g., to inform, to entertain, to explain, or to persuade); and supporting opinions/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction texts. [Text length and complexity appropriate for grade 5.]

D. Informational Texts

R1D4.5
Identify the informational text structures of description, sequence, and question and answer. [Text complexity appropriate for grade 5.]

R1D5.5
Organize information to show understanding (e.g., representing key points within text through paraphrasing, summarizing, and/or answering questions). [Text complexity appropriate for grade 5.]

Maine Reading Grade Level Expectations for Grade 6

Cluster 1: Reading and Viewing

A. Process of Reading

R1A7.6
Summarize whole text by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre. [Text complexity appropriate for grade 6.]

R1A8.6
Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 6.]

B. Literature and Culture

R1B8.6
Apply effective strategies for analyzing and describing characters' traits, interactions, and changes over time; making basic inferences about problem, conflict, or solution; of identifying the relationships among elements within the text (plot, character, setting, and types of conflict); determining author's message and point of view-stated or implied; and identifying the literary devices of flashback, foreshadowing, and repetition to the reading and interpretation of fiction. [Text complexity appropriate for grade 6.]

R1B9.6
Apply effective strategies for synthesizing information within and across text (s); making inferences about text, including author's message or purpose (e.g., to inform, to explain, to entertain, to persuade); and forming and supporting opinion/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction texts. [Text length and complexity appropriate for grade 6.]

D. Informational Texts

R1D4.6
Identify the informational text structure of compare and contrast. [Text complexity appropriate for grade 6.]

R1D5.6
Make inferences about text, including the author's purpose and/or message, by forming and supporting opinions/judgments and assertions about the text that are relevant. [Text complexity appropriate for grade 6.]

Maine Reading Grade Level Expectations for Grade 7

Cluster 1: Reading and Viewing

A. Process of Reading

R1A7.7
Summarize whole text by selecting and paraphrasing important and representative texts/passages, including the sequence of major events when appropriate for the genre.
[Text complexity appropriate for grade 7.]

R1A8.7
Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy). [Text complexity appropriate for grade 7.]

B. Literature and Culture

R1B8.7
Apply effective strategies for analyzing and describing characters' interactions and motivations- citing thoughts, words, or actions that reveal characters' personalities; making inferences about cause/effect, internal/external conflicts and resolutions; analyzing the relationship among elements within the text- person vs. self, person vs. person, person vs. nature/society/fate; explaining how the author's message or theme is supported within the text; analyzing the author's point of view; and identifying the literary devices of metaphors, personification, and onomatopoeia to the reading and interpretation of fiction. [Text complexity appropriate for grade 7.]

R1B9.7
Apply effective strategies for synthesizing and evaluating information within and across texts; making inferences about text, including author's message or purpose (e.g., to inform, to explain, to entertain, or to persuade); and forming and supporting warranted* opinions/judgments and assertions about the text that are relevant to the reading and use of narrative nonfiction. [Text length and complexity appropriate for grade 7.]
* defensible, viable

D. Informational Texts

R1D4.7
Identify the informational texts structures of problem/solution and cause/effect. [Text complexity appropriate for grade 7.]

R1D5.7
Make inferences about text, including the author's purpose and/or message, by forming and supporting warranted* opinions/judgments and assertions about the text that are relevant. [Text complexity appropriate for grade 7.]
*defensible, viable

Maine Reading Grade Level Expectations for Grade 8

Cluster 1: Reading and Viewing

A. Process of Reading

R1A7.8
Summarize whole texts by selecting and summarizing important and representative passages.
[Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

R1A8.8
Read for a variety of purposes (e.g., to gain knowledge, to aid in making decisions, to receive instructions, to follow an argument, to enjoy).
[Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

B. Literature and Culture

R1B8.8
Apply effective strategies to the reading and interpretation of fiction (e.g., science fiction, myths, mysteries, realistic and historical fiction, poems, adventure stories, and humorous tales), using texts that are appropriately sophisticated in style, point of view, and use of literary devices.
[Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

R1B9.8
Apply effective strategies to the reading and use of moderately long nonfiction texts (e.g., references sources, articles, editorials, histories, biographies, autobiographies, diaries, letters, and commentaries), which have an appropriate complexity of content and sophistication of style.
[Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

D. Informational Texts

R1D4.8
Identify different ways in which informational texts are organized.
[Maine GLE Reading Panel assumes the text complexity is appropriate for grade 8.]

R1D5.8
Produce and support generalizations acquired from informational text.